

CLAIMS

1. Dermal sheath tissue and/or cells derived therefrom and/or cells typically closely associated with hair follicles for use in gene therapy.
2. A gene therapy vehicle for delivering at least one selected gene, or functional fragment thereof, to a target site comprising dermal sheath tissues and/or cells derived therefrom and/or cells typically closely associated with hair follicles.
3. Dermal sheath tissue or a gene therapy vehicle according to Claims 1 or 2 wherein said tissue or cells is/are derived from the lower portion of a hair follicle.
4. Dermal sheath tissue or a gene therapy unit according to Claim 3 wherein said tissue or cells are derived from a lower third of said hair follicle.
5. Dermal sheath tissue or a gene therapy unit according to Claim 3 or 4 where said tissue or cells are derived from a segment or ring of a combination of follicle/tissue cells.
6. A gene therapy vehicle according to Claims 2-5 which is suitably engineered by recombinant techniques so as to include at least one insertion site into which at least one selected gene can be placed.

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7. A gene therapy vehicle according to Claims 2-6 wherein said selected gene is functionally inserted into said gene therapy vehicle so that the expression of said selected gene results in the provision of the corresponding protein product.

8. A gene therapy vehicle according to Claims 2-7 wherein said vehicle is provided with multiple insertion sites to carry multiple genes and so provide for the delivery of multiple proteins.

9. A gene therapy vehicle according to Claim 8 wherein said multiple proteins are of a similar nature.

10. A gene therapy vehicle according to Claim 8 wherein said multiple proteins are of a different nature.

11. A gene therapy vehicle according to Claims 2-10 wherein said selected gene for insertion is arranged so as to be inserted in frame with the genome of the gene therapy vehicle so as to provide for correct expression of said selected gene.

12. A gene therapy vehicle according to Claims 2-11 wherein said selected gene is operationally linked to a regulatable promoter.

13. A gene therapy vehicle according to Claims 2-11 wherein said selected gene is operationally linked to an inducible promoter.

14. A gene therapy vehicle according to Claims 2-11 comprising wherein said selected gene, is operationally linked to a constitutive promoter.

15. A vector for transforming or transfecting the gene therapy vehicle of Claims 2-14 wherein said vector is provided with at least one insertion site into which at least one selected gene, or functional fragment thereof, can be placed and also other expression control elements for ensuring that once the vector infects or penetrates said tissue and/or cells of said gene therapy vehicle, expression of said selected gene can take place.
16. A therapeutic composition comprising a suitable carrier and the gene therapy vehicle according to Claims 2-14.
17. A therapeutic composition according to Claim 16 wherein said composition is formulated to have anti-bacterial properties.
18. A therapeutic composition according to Claim 16 or 17 wherein said composition is formulated to have anti-septic properties.
19. A therapeutic composition according to Claims 16 - 18 wherein said composition is formulated to include growth promoting additives.
20. A therapeutic composition according to Claims 16-19 wherein said composition includes at least one anaesthetic.
21. A therapeutic composition according to Claims 16-20 wherein said composition is adapted to be applied topically in the form of dermal sheath cells provided in a suitable carrier solution, gel, cream or emollient.
22. A therapeutic composition according to Claims 16-20 wherein said

composition is adapted to be administered by/injection and so comprises a carrier solution.

23. A therapeutic appliance comprises a therapeutic composition according to Claims 16-22 wherein said carrier is incorporated and/or embedded therein, and/or associated therewith, and/or attached thereto, a plaster or bandage.

24. A gene therapy vehicle for use in delivering a selected gene, or functional fragment thereof, to a given site wherein said gene therapy vehicle comprises dermal sheath tissue and/or cells derived therefrom and/or cells typically closely associated with hair follicles, which tissue and/or cell have been suitably adapted to accommodate heterologous genetic material and which, in vivo, have the capacity to selectively differentiate to provide at least one differentiated tissue type.

25. A gene therapy vehicle according to Claims 2-14 and 24 which is adapted to be provided as a wound healing system.

26. A wound healing system comprising a suitable matrix material having incorporated and/or embedded therein, and/or associated therewith, and/or attached thereto, a gene therapy vehicle according to Claims 2-14 and 24.

27 A wound healing system according to Claims 26 wherein said
matrix material comprises native collagen.

	UNEMPLOYED	EMPLOYED	TOTAL	PERCENT UNEMPLOYED
Male	108	679	787	13.7%
Female	100	600	700	14.3%
Total	208	1,279	1,487	14.0%

28. A wound healing system according to Claims 26 or 27 wherein said matrix material comprises collagenous gels or lattices constructed from reconstituted collagen or highly complex mixtures of reconstructed collagen.
29. A wound healing system according to Claims 26-28 wherein said matrix material comprises extra cellular matrix products.
30. A wound healing system according to Claims 26-29 comprising a surgical dressing.
31. A wound healing system according to Claims 26-30 adapted for use in the treatment of acute, and/or chronic, and/or minor, and/or severe, wound healing.
32. A wound healing system according to Claims 26-31 for use in the treatment of cartilage repair, and/or bone repair, and/or muscle repair, and/or connective tissue repair, and/or blood vessel repair.
33. A wound healing system according to Claims 26-32 wherein said system comprises a plurality of cell types from a hair follicle.
34. A wound healing system according to Claim 33 wherein one of said cell types, in addition to said dermal sheath tissue, and/or cells derived therefrom, and/or cells typically closely associated with hair follicles, comprises dermal papilla tissue.
35. A therapeutic composition according to Claims 16-23 wherein said composition comprises a plurality of cell types from a hair follicle.

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36. A therapeutic composition according to Claim 34 wherein one of said cell types, in addition to said dermal sheath tissue, and/or cells derived therefrom, and/or cells typically closely associated with hair follicles, comprises dermal papilla tissue.

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